



# SPEC<sup>®</sup> CFP2006 Result

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## Itautec

### SPECfp<sup>®</sup>\_rate2006 = 97.7

### Servidor Itautec MP224 (Intel Xeon E5640)

### SPECfp\_rate\_base2006 = 95.0

CPU2006 license: 9001

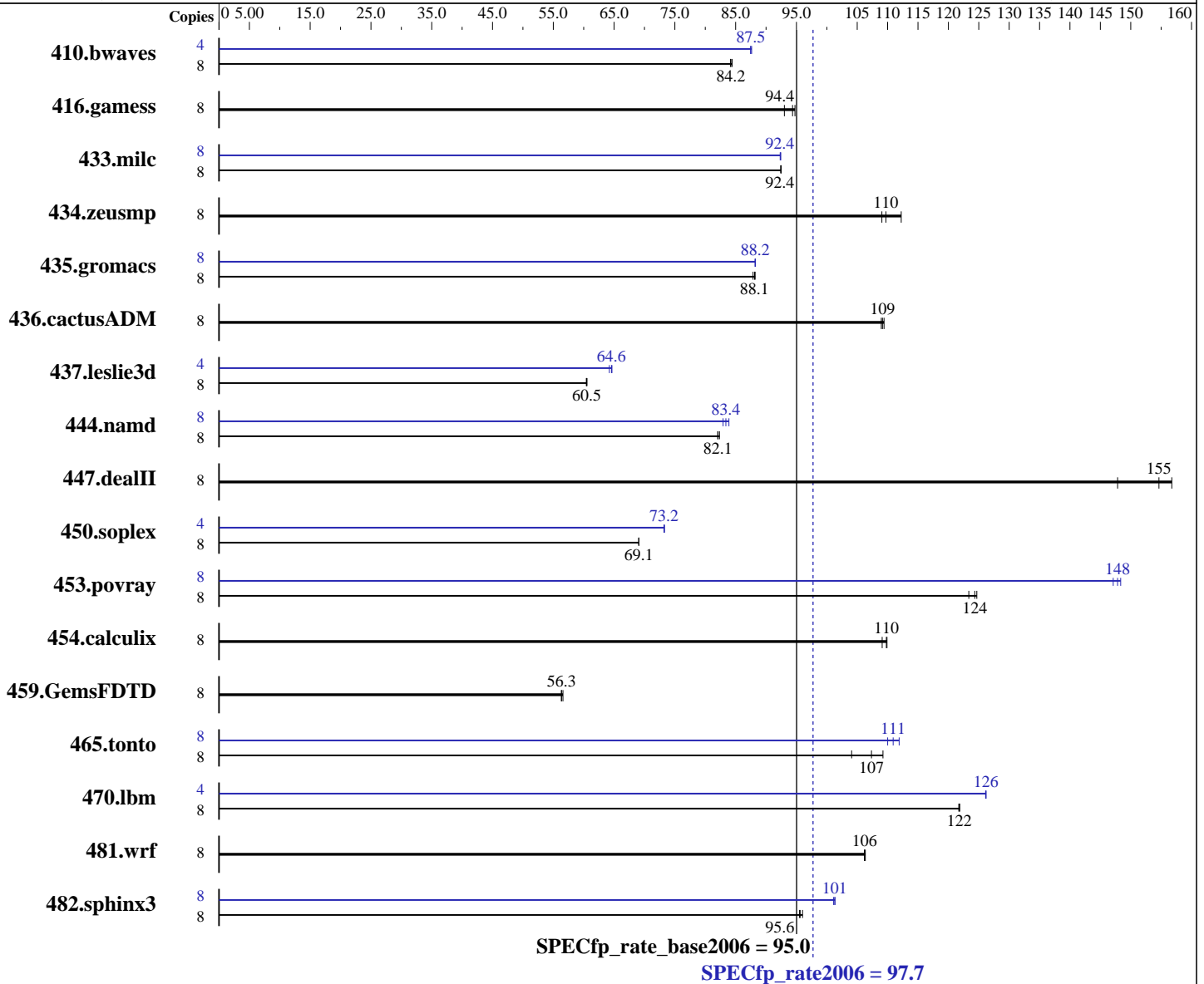
Test sponsor: Itautec

Tested by: Itautec

Test date: Aug-2011

Hardware Availability: Apr-2011

Software Availability: Jan-2011



#### Hardware

CPU Name: Intel Xeon E5640  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz  
 CPU MHz: 2667  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core

Continued on next page

#### Software

Operating System: SUSE Linux Enterprise Server 11 SP1 (x86\_64), Kernel 2.6.32.12-0.7-default  
 Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.2 Build 20110112  
 Auto Parallel: No  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit

Continued on next page



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L3 Cache: 12 MB I+D on chip per chip  
Other Cache: None  
Memory: 24 GB (6 x 4 GB 2Rx4 PC3-8500R-7, ECC)  
Disk Subsystem: 1 x 500 GB SATA-2, 7200 RPM  
Other Hardware: None

Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	1288	84.4	<u>1291</u>	<u>84.2</u>	1292	84.2	4	620	87.6	<u>621</u>	<u>87.5</u>	621	87.5
416.gamess	8	<u>1660</u>	<u>94.4</u>	1684	93.0	1653	94.8	8	<u>1660</u>	<u>94.4</u>	1684	93.0	1653	94.8
433.milc	8	794	92.5	<u>794</u>	<u>92.4</u>	795	92.4	8	795	92.4	795	92.3	<u>795</u>	<u>92.4</u>
434.zeusmp	8	649	112	<u>664</u>	<u>110</u>	668	109	8	649	112	<u>664</u>	<u>110</u>	668	109
435.gromacs	8	648	88.2	<u>648</u>	<u>88.1</u>	650	87.9	8	<u>647</u>	<u>88.2</u>	648	88.2	647	88.3
436.cactusADM	8	877	109	<u>876</u>	<u>109</u>	874	109	8	877	109	<u>876</u>	<u>109</u>	874	109
437.leslie3d	8	<u>1243</u>	<u>60.5</u>	1242	60.5	1244	60.4	4	585	64.2	<u>582</u>	<u>64.6</u>	582	64.6
444.namd	8	779	82.3	<u>782</u>	<u>82.1</u>	782	82.1	8	765	83.9	<u>769</u>	<u>83.4</u>	774	82.9
447.dealII	8	584	157	<u>592</u>	<u>155</u>	619	148	8	584	157	<u>592</u>	<u>155</u>	619	148
450.soplex	8	<u>966</u>	<u>69.1</u>	966	69.1	966	69.1	4	456	73.2	455	73.3	<u>456</u>	<u>73.2</u>
453.povray	8	341	125	<u>342</u>	<u>124</u>	345	123	8	287	148	289	147	<u>288</u>	<u>148</u>
454.calculix	8	605	109	601	110	<u>601</u>	<u>110</u>	8	605	109	601	110	<u>601</u>	<u>110</u>
459.GemsFDTD	8	1507	56.3	1500	56.6	<u>1507</u>	<u>56.3</u>	8	1507	56.3	1500	56.6	<u>1507</u>	<u>56.3</u>
465.tonto	8	721	109	756	104	<u>733</u>	<u>107</u>	8	716	110	<u>710</u>	<u>111</u>	703	112
470.lbm	8	902	122	<u>902</u>	<u>122</u>	903	122	4	<u>436</u>	<u>126</u>	436	126	436	126
481.wrf	8	840	106	<u>841</u>	<u>106</u>	841	106	8	840	106	<u>841</u>	<u>106</u>	841	106
482.sphinx3	8	<u>1631</u>	<u>95.6</u>	1624	96.0	1632	95.5	8	<u>1539</u>	<u>101</u>	1542	101	1538	101

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The config file option 'submit' was used.  
numactl was used to bind copies to the cores

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run.  
Large pages were not enabled for this run

## Platform Notes

Data Reuse disabled in BIOS.



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Test date: Aug-2011  
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## Base Compiler Invocation

C benchmarks:  
icc -m64

C++ benchmarks:  
icpc -m64

Fortran benchmarks:  
ifort -m64

Benchmarks using both Fortran and C:  
icc -m64 ifort -m64

## Base Portability Flags

410.bwaves: -DSPEC\_CPU\_LP64  
416.gamess: -DSPEC\_CPU\_LP64  
433.milc: -DSPEC\_CPU\_LP64  
434.zeusmp: -DSPEC\_CPU\_LP64  
435.gromacs: -DSPEC\_CPU\_LP64 -noFOR\_main  
436.cactusADM: -DSPEC\_CPU\_LP64 -noFOR\_main  
437.leslie3d: -DSPEC\_CPU\_LP64  
444.namd: -DSPEC\_CPU\_LP64  
447.dealII: -DSPEC\_CPU\_LP64  
450.soplex: -DSPEC\_CPU\_LP64  
453.povray: -DSPEC\_CPU\_LP64  
454.calculix: -DSPEC\_CPU\_LP64 -noFOR\_main  
459.GemsFDTD: -DSPEC\_CPU\_LP64  
465.tonto: -DSPEC\_CPU\_LP64  
470.lbm: -DSPEC\_CPU\_LP64  
481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX  
482.sphinx3: -DSPEC\_CPU\_LP64

## Base Optimization Flags

C benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

Fortran benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:  
-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias



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## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## Peak Portability Flags

410.bwaves: -DSPEC\_CPU\_LP64  
416.gamess: -DSPEC\_CPU\_LP64  
433.milc: -DSPEC\_CPU\_LP64  
434.zeusmp: -DSPEC\_CPU\_LP64  
435.gromacs: -DSPEC\_CPU\_LP64 -nofor\_main  
436.cactusADM: -DSPEC\_CPU\_LP64 -nofor\_main  
437.leslie3d: -DSPEC\_CPU\_LP64  
444.namd: -DSPEC\_CPU\_LP64  
447.dealII: -DSPEC\_CPU\_LP64  
453.povray: -DSPEC\_CPU\_LP64  
454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main  
459.GemsFDTD: -DSPEC\_CPU\_LP64  
465.tonto: -DSPEC\_CPU\_LP64  
470.lbm: -DSPEC\_CPU\_LP64  
481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3  
-ansi-alias -opt-prefetch -static -auto-ilp32

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## Peak Optimization Flags (Continued)

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2

### C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -fno-alias  
-auto-ilp32

447.deallI: basepeak = yes

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

### Fortran benchmarks:

410.bwaves: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -static

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

459.GemsFDTD: basepeak = yes

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto  
-inline-calloc -opt-malloc-options=3  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

### Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch  
-static -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes



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The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Itaotec-Intel-Linux64-Platform.html>

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Itaotec-Intel-Linux64-Platform.xml>

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.1.  
Report generated on Thu Jul 24 00:32:51 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 30 August 2011.